

## **REMARKS/ARGUMENTS**

The amendment adds claims 81-85 to define the superabsorbent polymer of any one of claims 71 – 80 as absorbing greater than 100 times its weight in water. Original claim 58 employs this parameter, and accordingly, the examiner has already searched and examined this aspect of the invention.

Applicant traverses the June 12, 2003 rejection for all of the reasons set forth in his Brief on Appeal filed November 21, 2001, and his response filed August 23 2002, after the examiner reopened prosecution of the application. Applicant incorporates the entire Brief and entire response by reference into this amendment.

The Examiner rejects claim 61-68 and 73-80 under 35 U.S.C. § 112 first paragraph as containing subject matter which the applicant did not describe in the specification in such a way as to reasonably convey to one skilled in the art that at the time he filed the application, he had possession of the claimed invention. Applicant traverses the rejection and requests further consideration reexamination.

In specifically rejecting the claims, the examiner did not find any explicit disclosure for the expression "the substrate comprises a cable" and "the substrate comprises a wire." (June 12 Office Action, p. 2). Applicant's disclosure, however, does in fact support both expressions, as the following will show.

Page 20 of the written description makes clear that the invention inter alia comprises the application of a "coating" of the disclosed superabsorbent polymer-lubricant composition to a substrate as well as the article of manufacture obtained. Page 20 also describes applicant's use of related art lubricants specified at pages 6 -19 in the superabsorbent polymer-lubricant composition. The lubricants noted at page 12 in this

regard are used in cables (written description, page 12, line 6 from the bottom). The written description also describes related art lubricants applied to a wire substrate in "wire drawing processes" at page 16, line 8 from the bottom, and page 17, line 5.<sup>1</sup> The application therefore clearly shows applicant taught the use of his superabsorbent polymer-lubricant composition as a coating for both cables and wires.

Page 19, second paragraph further supports this construction, noting "that there is a need for additional materials that will provide the same advantage as those of the related art as well as additional advantages and also materials that will overcome some of the various disadvantages of the related art." (Emphasis added) The fourth paragraph on page 19 of the written description then states that "these and other advantages are obtained according to the present invention, which is the provision of a composition and a process to enhance the various advantages of the related art and which also substantially obviate one or more of the limitations and disadvantages of the described prior compositions of matter and processes." (Emphasis added) The "related art" disclosed in the application specified "cable" coatings and "wire" coatings. Clearly this comprises a description of using applicant's superabsorbent polymer-lubricant composition in cable and wire applications where he at a minimum stated that these "materials. . . will provide the same advantage as those of the related art. . . ."

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<sup>1</sup> The written description also discloses applicant's superabsorbent polymer-lubricant composition on a wire whisk at page 47, line 8 from the bottom.

The law does not require verbatim disclosure, just that the applicant disclose the invention in a way to show that he had possession of the subject matter of the invention at the time he filed the application. Applicant has met that requirement.

The application therefore supports claim 61, and the claims dependent on it that relate to a "cable" coated with applicant's superabsorbent polymer-lubricant composition. The application also supports claim 62, and the claims dependent on it that relate to a "wire" coated with applicant's superabsorbent polymer-lubricant composition.

The Examiner rejects claim 58, 61, 62, 67 and 68 under 35 U.S.C. § 112 first paragraph as containing subject matter which the applicant did not describe in the specification in such a way as to reasonably convey to one skilled in the art that at the time he filed the application, he had possession of the claimed invention. The examiner in making this rejection focused on the claim 58 parameters that "the superabsorbent polymer. . . desorbs water when the coating is dried." Applicant traverses the rejection and requests further consideration reexamination.

The Examiner argues that the statement on pages 31 and 32 of the written description that "the lubricant composition is then dried to remove water . . . . This removes substantially all of the water introduced in the first part of the process" does not support the "subject matter of claim 58 that the 'superabsorbent polymer . . . desorbs water [when] the coating is dried. . . ." (June 12, Office Action, p. 5, par. 3). The examiner makes substantially the same argument with regard to claim 70.

Pages 31 and 32 in this regard describe a method of combining the superabsorbent polymer with the lubricant and additives, when employed, by using

water or high humidity (80% R. H.) to swell the superabsorbent followed by placing the composition obtained in a 27-38% R. H. environment to remove "substantially all of the water introduced in the first part of the process. " The application therefore unequivocally states that the superabsorbent polymer desorbs water upon drying.

Furthermore, the Examiner finds that pages 17 and 18 directed to "binder systems" do not support the "subject matter of claim 67 and 68 that the 'coating further [comprises] a binder.'" (June 12 Office Action, page 5, par. 4). Again, applicant traverses the rejections for the same reasons set forth on pages 4-8 of the November 29 Brief on Appeal incorporated herein by reference. The Examiner in commenting on the applicant's description of the binder "did not find any explicit disclosure to any binders at pages 19, 20 and 21 and applicants [sic] did not particularly set forth or point out any such paragraph as to the location of said binders." (June 12, Office Action, p. 6, lines 1-3).

Applicant again relies on pages 17-21 of the written description for support of the binders now claimed. The paragraph bridging pages 17 and 18 refers to "various thermosetting and thermoplastic and curable binder systems including phenolic, vinyl, acrylic, alkyd, polyurethane, silicone and, epoxy resins." (Emphasis added). Applicant then states, "It would be an advantage, however, to provide a novel binder that performed in the same way or improved on the function of these binders." (Written description, paragraph bridging pages 17 and 18) (emphasis added).

As noted before, the written description states on page 19, second paragraph "that there is a need for additional materials that will provide the same advantage as those of the related art as well as additional advantages and also materials that will

overcome some of the various disadvantages of the related art." (Emphasis added)

The fourth paragraph on page 19 of the written description then states that "these and other advantages are obtained according to the present invention, which is the provision of a composition and a process to enhance the various advantages of the related art and which also substantially obviate one or more of the limitations and disadvantages of the described prior compositions of matter and processes." (Emphasis added).

The prior art as described in the application related to various binders such as polyurethane binders, and the application goes on to describe that the present invention "improved on the function of these binders." Clearly this comprises a description of using the binders of the prior art in combination with the superabsorbent polymers and lubricants broadly described in the first paragraph on page 20 of the written description.

Again, the law does not require verbatim disclosure, just that the applicant discloses the invention in a way to show that he had possession of the subject matter of the invention at the time he filed the application. Applicant has met that requirement.

The examiner also argues that the written description does not support the "substantially anhydrous" [sic] parameter of claims 69-80. (June 12, Office Action, first full par. p. 6). Applicant traverses the rejection for the same reasons given above in traversing the examiner's rejection of claims 58 and 70.

The Examiner rejected claims 57-58, 61, 62, 65, 69-70, 73-74, and 77 under 35 U.S.C. § 102 (b) as anticipated by Geursen et al. WO 93/18223 (counterpart U. S. Patent No. 5,534,304) (Geursen). Applicant traverses the rejection and request further consideration and reexamination.

Guersen discloses a process for treating a substrate such as a fiber or fibrous product with a superabsorbent material and addresses the dual problem, on the one hand of developing a flowable aqueous emulsion having a sufficient amount of superabsorbent polymer to form a coating that acts as a water barrier, and on the other, of providing a formulation that did not gel because of the superabsorbent polymer.

Guersen specifically notes:

The drawback to impregnating a substrate with a superabsorbent material dispersed in an aqueous system is that, due to the superabsorbent's high viscosity-enhancing action, steady feeding of it is extremely difficult if not impossible. Further, on account of the restricted superabsorbent concentration in the impregnating liquid only a small quantity of superabsorbent material can be applied to the yarn per treatment. Another drawback to this method is that the comparatively large amount of impregnating liquid which is applied to the substrate with the superabsorbent material has to be removed by evaporation.

Guersen WO 93/ par. bridging pp. 4-5; U.S. column 2, lines 57-67.<sup>2</sup>

The superabsorbent polymer employed by Guersen does not dissolve in water, so Guersen formed an emulsion of the polymer in water by polymerizing the water soluble monomer in a water-in-oil emulsion to form the polymer in the aqueous phase. (WO 93/ p. 7, lines 16-19; U.S. Col. 4, lines 1-16)<sup>3</sup>. Guersen uses the emulsion as a

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<sup>2</sup> Willemsen et al. U. S. Pat. No. 6,319,558 ("Willemsen") (of record), assigned to Akzo Nobel, as is Guersen, acknowledges the same problem. Willemsen USPTO Patent Full Text and Image Data Base, p.4, par. 1.

<sup>3</sup> Guersen forms a coating "via an emulsion of the superabsorbent in a water-in-oil-emulsion, the superabsorbent material being present in the aqueous phase of the emulsion." WO 93/ p.7, lines 1-5; U.S. col. 3, lines 64-67 (emphasis added).

coating, and subsequently heat-treats it to drive off the water phase and oil phase, generally a relatively low boiling paraffin hydrocarbon. (WO 93/ p. 5, lines 19-28; U. S. Col. 3, lines 15-23). Geursen also discloses commercially available water-in-oil emulsions prepared in the same way, which may also include additives, such as lubricants and emulsifying agents. (WO 93/ p. 7, lines 20-27, p. 8 lines 10-14; U. S. Col. 4, lines 17-26; 42-47).

The disclosed aqueous polymerization of the monomer into a superabsorbent polymer resulted in a polymer that absorbs about 45 or 20 times its weight in water. An examination of the Geursen examples will show that the reference contains experimental data showing only the production of these low water absorbing superabsorbent polymers, and the desirability of using them and not superabsorbent polymers that absorb greater than about 100 times their weight in water. Geursen therefore teaches away from the use of superabsorbent polymers that absorb greater than about 100 times their weight in water, and also lacks an enabling disclosure of how to produce oil in water emulsions of superabsorbent polymers that absorb greater than about 100 times their weight in water.

The reference describes yarns coated with a superabsorbent polymer composition which have a "swelling value" (WO 93/ p. 13line 15 to p.14 line 5; U. S. Col. 7, lines 19-44) defined by a formula (WO 93/ p.13, lines 9-14; U. S. Col. 7, lines 45-51). The swelling value consists of a number that indicates the relative water absorbency of the yarn or the yarn coated with the superabsorbent polymer composition.

The following analysis of the data in Geursen bears out the reference does not teach or suggest superabsorbent polymers that can absorb greater than about 100 times their weight in water for the process or product disclosed.

Table A, reports the swelling values of a polyester yarn coated with a superabsorbent water-in-oil emulsion. Prior to coating, the yarn had a swelling value of 9 (WO 93/ p. 17, line25; U. S. Col. 9, lines 34-35). The formula in WO 93/ p.13, lines 9-14; U. S. Col. 7, lines 45-51 gives the swelling value of the superabsorbent polymer:

$$\text{swelling value} = \frac{(a - b) \times 100}{b}$$

Arbitrarily setting the weight of the yarn (the value for "a") at 100 grams will give the dry weight of the yarn (the value for "b") as follows:

Example 1                      Swelling value of uncoated yarn = 9 (Col. 9, lines 34-35)

$$\frac{100-b}{b} = 0.09$$

$$100 = 1.096b$$

$$b = 91.74 \text{ (dry weight of yarn)}$$

$$\text{Yarn water absorption} = 100 - 91.74 = 8.26$$



Example 1

Swelling value of coated yarn = 114 (Col. 9, line 28)

$$\frac{100-b}{b} = 1.14$$

$$100 = 2.146b$$

$$b = 46.72 \text{ (dry wt. of yarn and superabsorbent polymer)}$$

Coated yarn water absorption =  $100 - 46.72 = 53.28$

$$53.28 - 8.26 = 45.02 \text{ water absorbed by superabsorbent polymer}$$

$$46.27 \times 2.1\% \text{ polymer (Col 9, line 28)} = 0.97 \text{ superabsorbent polymer on yarn}$$

$$\frac{45.02}{0.97} = 46.3 \text{ Superabsorbent polymer absorbs 46.3 times its weight in water.}$$

This shows that 0.97 grams of superabsorbent polymer picked up or absorbed 45.02 grams of water or 46.3 times its weight in water, less than one-half of that of applicant's claimed superabsorbent polymer which absorbs greater than about 100 times its weight in water.

The reference also shows Example 3 uses the same yarn employed in Example 1 but with the application of 7.0 weight percent of the same superabsorbent polymer employed in Example 1. Also the swelling value of the sample increased from 114 in Example 1 to 171 in Example 3. Using the method above (pp. 6-7 of this brief), shows that the superabsorbent polymer of Example 3 had a water absorbency of about 20 (actually, 21.2, which sets the superabsorbent polymer concentration at about 80 weight %) as compared to the water absorbency of Example 1 of 45 ( i.e., a superabsorbent polymer concentration of 55 weight %).

The same calculations will show the superabsorbent polymer of experiment 4 (Table B) coated on a nylon-6,6 yarn absorbs about the same amount of water, i.e., less than about one half applicant's claimed superabsorbent polymer that absorbs greater than about 100 times its weight in water.

These data from Guersen clearly show the inventors did not know how to combine a lubricant with a superabsorbent polymer that absorbs greater than about 100 times its weight in water, or the desirability of doing this. Since the reference does not disclose this type of polymer coating or how to produce it, Geursen does not contain an enabling disclosure. Applicant, on the other hand, has disclosed methods on how to combine superabsorbent polymers that absorb greater than about 100 times their weight in water with lubricants and use the combination as a lubricant.

Guersen attempted to address the problem of coating a superabsorbent polymers on yarn in light of the primary difficulty the industry had with them, namely that when combined with water they caused extremely high viscosities at a relatively low concentration. The superabsorbent polymer formulation sought by Geursen, not only

had to have some flowable characteristics in order to apply it as a coating material, but also had to have a relatively high solids content. Cf. Geursen, WO 93/ par. bridging pp. 4-5, U.S. column 2, lines 57-67.

Guersen addressed this problem by polymerizing the superabsorbent monomer to form an emulsion with the superabsorbent polymer in the water phase. Analyzing the nature of water-in-oil emulsions will illustrate further how Geursen achieved the goal of not only providing a superabsorbent polymer formulation having relatively high superabsorbent polymer solids, but also a flowable composition that could be coated onto a substrate with relative ease.

This water phase consists of very small droplets of superabsorbent polymer in combination with water (the discontinuous phase) suspended in the oil phase (the continuous phase). One can easily visualize that the viscosity of the droplets made up of water and a superabsorbent polymer would have little, if any, effect on the oil or continuous phase if the particles were sufficiently mobile in the continuous phase, e. g., by employing a sufficient volume of the continuous phase. By utilizing an emulsion, Geursen addressed the major problem caused by the high viscosity superabsorbent polymers, namely their tendency to impart high viscosity to the formulation. Geursen thereby obtained a formulation that flowed readily and fulfilled the need to employ superabsorbent polymers as an easily applied coating.

Geursen, however, had to address another problem, namely the superabsorbent polymer solids content in the dispersed phase or the droplets. If he employed a superabsorbent polymer that absorbed 1,000 times its weight in water the droplets would contain 1,000 parts by weight of water for every one part of superabsorbent

polymer (0.1% superabsorbent polymer) and he would not resolve the problem of applying a sufficient amount of superabsorbent polymer onto a substrate so it could act as a water barrier. Similarly if he used a superabsorbent polymer that absorbed greater than about 100 times its weight in water, each droplet would contain about 100 parts by weight of water for one part of superabsorbent polymer (1% by weight of superabsorbent polymer). In both instances, the superabsorbent polymers would not provide a high solids coating.

Geursen appears to address this solids problem by using a superabsorbent polymer that absorbs only about 45 times its weight in water, and using the analysis above, each droplet of the emulsion would contain about 55 parts by weight of superabsorbent polymer and 45 parts by weight of water, a 55-fold increase in solids over a superabsorbent polymer that absorbs about 100 times its weight in water. Geursen employing a superabsorbent polymer that absorbed about 20 times its weight in water gave him a solids content of 80 parts of the polymer, amounting to an 80-fold increase over a superabsorbent polymer that absorbs about 100 times its weight in water.

Using superabsorbent polymers that only absorb about 45 or 20 times their weight in water allowed Geursen to achieve the dual objective of not only laying down relatively large amounts of superabsorbent polymer as a coating, but also avoiding the problem of removing large quantities of water from the substrate.

Geursen also appears to avoid this problem of high water absorbing superabsorbent polymers by using a sodium sulphonate electrolyte in the emulsion polymerization process. For example, Guersen, WO 93/ par. bridging pp.16-17; U. S.

column 9, lines 8 et. seq. discloses using a sodium sulphonate ("sulpho") salt of the superabsorbent monomer.<sup>4</sup>

Levy (of record), however, discusses this well known technique of reducing both the viscosity and water absorbency of a superabsorbent polymer, observing:

normally, unmixed formulations of superabsorbent polymers and water have a tendency to form gels of such a high viscosity that they are not flowable. An additional technique used to render a viscous superabsorbent polymer composition . . . flowable, is the additional [sic, addition] of varying concentrations of one or more salt(s)/electrolyte(s) such as sodium chloride. . . . These salt(s)/electrolyte(s) have a tendency to interfere with the hydrogen bonding or reduce the hydrophilic bonding of the water to the gel. Also, superabsorbent polymers . . . absorb less water when electrolytes are present.

Levy, U.S. Patent No. 4,985,251 column 15, lines 12-26 (emphasis added).

Takeda et al. United States Patent No. 4,618,631 (of record) teaches the same phenomenon in table I at column 7, lines 41-55, Table II, column 8, lines 60-65, and Table III, column 10, lines 1-10. These data show that the addition of an electrolyte to a superabsorbent polymer reduces the water absorbency of the polymer by a factor of about ten. For example, the addition of an electrolyte to a superabsorbent polymer with a water absorbency of about 500 times its weight in water will reduce the absorbency of the polymer to about fifty times its weight in water. Garner et al. Journal of Chemical Education, January 1997, Vol. 74 No. 1, p. 95 (of record) describes this as well.

This raises the question as to whether or not Geursen added sodium chloride or a similar salt to the superabsorbent polymer emulsion to reduce the water absorbency

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<sup>4</sup> Geursen might also have employed sodium chloride as an electrolyte to achieve this result, which this brief discusses later.

of the polymer. A further examination of the data reported in Table A of Geursen suggests this. The superabsorbent polymer of Example 1 of Geursen absorbed about 45 times its weight in water, whereas the superabsorbent polymer of Example 3 absorbed about 20 times its weight in water. Bearing in mind that Geursen employed the same superabsorbent polymer in both examples, the skilled artisan would know that something was done in the experiments to obtain that difference in water absorbency, but not reported. Applicant believes that Geursen added a salt such as sodium chloride to the emulsion of Example 3 to change the water absorbency of the superabsorbent polymer.

Another factor that influences the absorbency of these superabsorbent polymers is the degree of polymer cross-linking, but Geursen doesn't discuss this, even though known in the prior art, e.g., Garner et al. supra. Geursen by employing the same superabsorbent polymer in both examples 1 and 3 does not appear to have changed the cross-linking of the superabsorbent polymer. Geursen also discloses the addition of other components to the polymerization reaction, without indicating anything about the effect they may have on water absorbency of the polymer obtained. Geursen, WO 93/ par. bridging pp. 7-8, p. 8, lines 20-30; U.S. column 4, lines 28-33, lines 51-58.

Although Geursen might appear to disclose using superabsorbent polymers having water absorbencies greater than 100, (WO 93/ par. bridging pp.12-13; U.S. column 7, lines 1-6) he does not. A closer reading of the reference shows this disclosure relates to a "product" further described as a combination of the substrate with the superabsorbent polymer, and not the superabsorbent polymer alone. WO93/ lines 23-24; U.S. column 6, lines 57-60. As illustrated above, Geursen's substrates absorb

water and have an affect on the overall water absorbtion of the combination. The water absorbtion of the "product" takes into account the combined effect of the substrate absorbing water and the polymer absorbing water. Geursen therefore does not teach the use of a superabsorbent polymer having a water absorbency greater than about 100, but rather the water absorbency of the "product" which is the substrate combined with the superabsorbent polymer.

Because Geursen teaches superabsorbent polymer coatings that absorb only about 45 or 20 times their weight in water, the reference clearly raises the question of how the skilled artisan gets over the hurdle of this water absorbency of 45 or 20 to arrive at applicant's lower limit of water absorbency greater than about 100, and why she or he would be led by the reference to do this? The reference clearly lacks an enabling disclosure of how to do it. The Examiner therefore has not met the burden of providing evidence that Geursen does in fact show a superabsorbent polymer in an aqueous medium suitable for coating a substrate, where the superabsorbent polymer absorbs greater than about 100 times its weight in water. Lacking this evidence, the rejection cannot stand.

The Examiner rejects claims 57-80 under 35 U.S.C. § 103 (a) as obvious in view of Geursen combined with the admitted prior art in view of Hopkins et al., U.S. Patent No. 5,362,788 ("Hopkins") and Sayad et al. United States Patent No. 3,336,225 ("Sayad"). Applicant traverses the rejection and requests further consideration and reexamination.

Applicant distinguishes Guersen for all of the reasons given previously. Hopkins describes a method for combining a superabsorbent polymer with a "matrix" material

such as cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers. (Hopkins, col. 1, lines 29-35; col. 2, lines 10-19). The "matrix" material further includes "plasticizers" (col. 2, line 23) which, the skilled artisan knows increases the flexibility of the matrix material, i.e., cellulose acetate, methacrylate polymers, polyvinyl acetate, copolymers and combinations of these polymers.

A "matrix" does not disclose or suggest a "substrate." Webster's Ninth New Collegiate Dictionary defines "matrix" as a "material in which something is enclosed or embedded (as for protection or study)." Hopkins obviously uses the matrix to envelop particles of the superabsorbent polymer in describing the invention as "providing a matrix material in a suitable solvent; mixing particles of a superabsorbent polymer into said solutioned [sic] matrix material to form a suspension; homogenizing the suspension; and removing the solid from the suspension." (Col. 1, lines 30-35) (Emphasis added). The foregoing description clearly conveys that Hopkins only dissolves the matrix in a solvent and not the superabsorbent polymer, but rather mixes particles of the superabsorbent polymer into the solution of the matrix in the solvent to form a "suspension."

In fact, Hopkins defines the term "suspension" as a "mixture containing a substantially uniform distribution of solute and particulate matter through the liquid carrier." (Col. 2, lines 30-33). There can be no doubt that Hopkins by referring to the "particles of a superabsorbent polymer" in this section, further confirms the end product comprises a matrix of materials such as cellulose esters that envelop particles of superabsorbent polymer.

The subsequent disclosure relative to the plasticizers clearly teaches that these plasticizers combine with the matrix material and not with the superabsorbent polymer.



Hopkins in this regard states that the "matrix material may further comprise additives [such as] plasticizers . . . ." (Col. 2, lines 19-23) (emphasis added). Here, Hopkins clearly describes he plasticizes the "matrix" and not the superabsorbent polymer.

Thus the addition of plasticizers such as glycerin to the Hopkins composition addresses the need to plasticize the matrix material and in no way would teach a person with ordinary skill in the art that the plasticizers combine with the superabsorbent polymer.

The examples describe adding a solution of cellulose acetate in acetone in combination with a superabsorbent polymer (Sanwet® IM-1000) and glycerin (a plasticizer) to a high shear mixing apparatus to form a solution, which when subsequently cast into films and air dried retains a 0.9% saline solution. Although Hopkins combines a superabsorbent polymer with acetone in the examples, the skilled artisan knows that acetone will not dissolve superabsorbent polymers such as Sanwet® IM-1000, and that in essence the combination of acetone and superabsorbent polymer comprises a slurry of particles of the superabsorbent polymer in the acetone in order to facilitate introducing it into the solution of cellulose acetate. Furthermore, Hopkins had no awareness of any lubricating properties of the combination of cellulose acetate or other matrix materials with a superabsorbent polymer.

Hopkins fails to teach a utility for the combination of superabsorbent polymer and matrix material. The reference describes the matrix material as having good absorbent and retention properties and further immobilizes the superabsorbent polymer. (Col. 1, lines 18-19). Hopkins further indicates the matrix materials "can be made porous as would be desirable for filtration membranes." (Col. 1, line 66, Col. 2, lines 7-9).

The reference constitutes nonanalogous art in that it fails to teach anything about the formation of a lubricant or the use of the disclosed material for the purpose of lubrication. Applicant no longer relies on the "consisting essentially of" terminology in the claims to distinguish Hopkins.

The teachings of Brannon-Peppas (the admitted prior art) only refer to art known superabsorbent polymers, and standing by itself, or even taken with the Hopkins teaching does not convey to a person with skill in the art that Hopkins obtains a superabsorbent polymer combined with a lubricant.

Applicant distinguishes Sayad since the reference only teaches water-soluble acrylamides and not superabsorbent polymers that absorb greater than about 100 times their weight in water. The two polymers are not the same. Superabsorbent polymers swell when combined with water, but do not dissolve in water. Water-soluble acrylamides, as the term implies, dissolve in water. Sayad employs water-soluble acrylamides in combination with an aqueous soap solution in a method for reducing friction on a conveyor, but does not use superabsorbent polymers. In addition, Sayad fails to teach or suggest applicant's lubricant additives with the aqueous soap solution.

The Examiner nonetheless asserts that Sayad discloses a superabsorbent polymer even though she cannot find anything in the reference to support her conclusion. In fact, if Sayad did contain this teaching, the Examiner would not have to resort to combining the teachings of Sayad with other references that specifically describe superabsorbent polymers. The Examiner does not point to anything in this reference that shows Sayad describes superabsorbent polymers. She cannot, since Sayad does not contain this teaching.

### **The References Provide No Motivation to Combine Their Teachings**

The Examiner "has to point to some teaching, suggestion or motivation in the prior art to select and combine the references that . . . [she] relied on to show obviousness." In re Lee, 61 U.S.P.Q. at 1434 (emphasis added). "When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to select and combine the references relied on as evidence of obviousness... 'the central question is whether there is a reason to combine references.'" Lee, 61 U.S.P.Q. at 1435 (emphasis added) (citation omitted). Applicant submits that the Examiner has not pointed to anything in the cited references that would lead a person with ordinary skill in the art to combine their teachings.

The combination of references does not make applicant's invention obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. Section 2143.01 citing In re Mills, 916 F.2d 680, 16 U.S.P.Q. 2nd 1430 (Fed. Cir. 1990). Also, there must be some reasonable expectation of success (M.P.E.P. Section 2143.02, and cited authorities) and that some advantage or expected beneficial result would have been produced by their combination. (M.P.E.P. Section 2144 citing In re Sernaker, 702 F.2d, 989, 994-95, 217 U.S.P.Q. 1,

In rejecting the claims on a combination of references, the Examiner has Hopkins teaching a polymer such as cellulose acetate with a plasticizer, as a matrix for a superabsorbent material, and Geursen teaching a superabsorbent polymer absorbing only about 45 times its weight in water applied to a substrate as a water in oil emulsion, followed by removing the oil phase (a paraffinic hydrocarbon) by evaporation. Adding The Admitted Prior Art to the mix gives the Examiner citations to show the art contains

teachings of superabsorbent polymers that absorb greater than about 100 times their weight in water, as well as extensive disclosures of lubricant materials and technology, but applicant disclosed this in the written description when he filed the application. Where then, in all of these references, can a skilled artisan find a teaching, suggestion, or motivation to pick and chose from them, and then combine the pieces to arrive at applicant's invention that broadly comprises a lubricant in combination with a superabsorbent polymer that absorbs greater than about 100 times its weight in water? Applicant submits the skilled artisan couldn't without applicant's disclosure in front of them.

A 35 U.S.C. § 103 rejection cannot stand if it amounts to taking applicant's "claims as a frame and the prior art references as a mosaic to piece together a facsimile of the claimed invention." W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1551, 220 U.S.P.Q. 303 (Fed. Cir. 1983).

The examiner has not pointed to anything in the references that suggest the desirability of the combination. She also has not found anything in them that points to some reasonable expectation of success in making the combination, and lastly she gives no indication where they teach or suggest some advantage or expected beneficial result would have been produced by their combination. The references neither contain these suggestions nor convey some reasonable expectation of success. They fail to meet any test of motivation to combine their teachings.

**The Examiner Has Improperly Relied on Non-Analogous  
Art to Make The Rejection**

By combining the teachings of the various references under 35 U.S.C. § 103, the Examiner has relied on non-analogous art since the references are not related to the same field of endeavor or reasonably pertinent to the problem addressed by the inventor. In re Clay, 966 F.2d, 656, 23 U.S.P.Q. 2d at 1058 (Fed. Cir. 1992).

Hopkins falls into the category of non-analogous art since the reference describes a polymeric matrix for a superabsorbent polymer having no disclosed utility, other than a suggestion that it forms a porous filtration membrane. Hopkins does not relate to the same field of endeavor nor is it "reasonably pertinent to the problem with which the inventor is involved." Clay, 966, F.2d at 658, 23 U.S.P.Q. 2d at 1060.

**The Provisional Double Patenting Rejection**

The Examiner provisionally rejects claims 57-80 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending applications Serial Nos. 09/357,957, 09/359,809, and 09/799,559.

The Patent Office has not issued a Notice of Allowance in any of the copending applications applied in the double patenting rejection.<sup>5</sup> When a provisional double patenting rejection is the sole remaining rejection in one of two or more applications subject to the same rejection but which remain under rejection on additional grounds, the Manual of Patent Examining Procedure ("MPEP") requires the Examiner to withdraw the rejection in that one application and permit it to issue as a patent. Once it issues,

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<sup>5</sup> The examiner of application Serial No. 09/799,559, has allowed some claims, but has not issued a Notice of Allowance, since she indicates she may declare an interference.

the MPEP instructs the examiner to apply a non-provisional double patenting rejection to the other application(s). MPEP § 804(I)(B) p.800-15 July 19, 1998.

Importantly, the examiner has committed to addressing the provisional double patenting rejection in the foregoing manner at page 7 last paragraph of her April 4, 2002 Office Action In Serial No. 09/359,809, one of the applications she applies to the double patenting rejection in this application.

Accordingly, applicant requests the examiner to issue a notice of allowance in this application when she withdraws the 35 U.S.C §§ 112, 102 and 103 rejections where the other application remain under rejection.

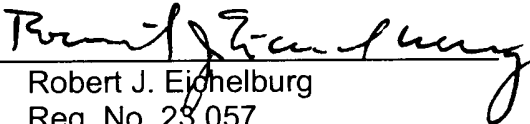
### **CONCLUSIONS**

Applicant requests the Examiner to withdraw the rejections in view of the foregoing amendments and remarks and pass the application to issue .

Respectfully submitted,

THE LAW OFFICES OF ROBERT J. EICHELBURG

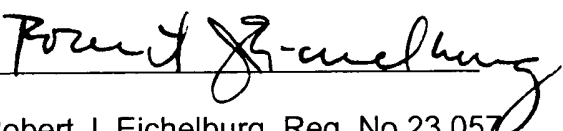
Dated: September 9, 2003

By:   
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Reg. No. 23,057

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